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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/748,512	12/26/2000	Jean-Pierre Giacalone	TI-31754	4129

23494	7590	11/29/2004	

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EXAMINER
CHAUHAN, ULKA J

ART UNIT	PAPER NUMBER
2676	

DATE MAILED: 11/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _26 August 2004_.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under _Ex parte Quayle_, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-15_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) _1-14_ is/are allowed.

6)☒ Claim(s) _15_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

1.   Claims 1-15 are pending.

Claim Rejections - 35 USC § 102

2.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on
> sale in this country, more than one year prior to the date of application for patent in the United States.

3.   **Claim 15 is rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No.**

5,920,353 to Diaz et al.

4.   As per claim 15, Diaz teaches an architecture of a multi-standard decoder 200 which can

decode input that is encoded in any of a number of different formats and that is used for video

telephony [col. 5 line 66-col. 6 line 15, col. 6 lines 25-28, and Fig. 2]. Diaz discloses a computer

80, a memory 160 (*"a random access memory"*), and the decoder 200' all coupled to a processor

75 (*"a processor for executing software instructions for processing images and video"*) through

a bus 77 (*"a bus"*) [Fig. 5]. Diaz discloses that the decoder 200 is composed of functional blocks

or modules connected to memory 160 and a processor 75 to allow the processor 75 to control the

access of the functional blocks [col. 12 lines 40-47]. The decoder 200 modules include block

decoder module 50 containing IDCT module 46, motion compensation engine 90 containing

half-pel filter 78 for performing half-pixel interpolation, an encoder module 88 containing DCT

circuit 112 and motion estimation engine 86 (*"one or more hardware accelerators for*

performing certain video processing functions") [Figs. 2 and 3]. Diaz also discloses that the

processor 75 allows some of the functional blocks of the decoder 200' to be performed in

software in the processor 75 to either completely replace some or part of some of the functional

blocks, or to allow the function to be performed in either hardware or software ("***certain***

software instructions can be processed by either the processor or a hardware accelerator") [c.

13 ll. 38-42 and c. 8 ll. 5-15]. And Diaz discloses that the decoder operates in real-time and

dynamically determines if a function can be performed in software or hardware [c. 9 ll. 51-58

and c. 10 ll. 24-28]. How much of the operation is performed in the processor 75 is based on

balancing the processing capacity and speed of the processor 75 with the complexity and amount

of processing required to perform the function as specified by the standard to which the encoded

bitstream complies in real time ("***the decision to process the certain software instruction in the***

processor is made in real-time") [c. 10 ll. 6-11].

Allowable Subject Matter

5.   Claims 1-14 are allowed.

6.   The following is a statement of reasons for the indication of allowable subject matter: the

cited prior art does not disclose or render obvious the combination of elements recited in the

claims as a whole. Specifically, the prior art fails to disclose or render obvious the following

limitations: a motion estimation hardware accelerator and a transform coding hardware

accelerator, performing motion estimation functions and transform coding functions respectively,

in response to requests from a processor and returning the result to the processor for further

processing as per amended independent claims 1 and 7.

Response to Arguments

7.   Applicant's arguments filed 8/26/04 have been fully considered but they are not

persuasive. With respect to claim 15, Applicant argues that no where does Diaz teach or suggest

that its "balancing determination" is based in whole, or in part, upon whether or not its hardware

accelerator is coupled to the bus. Applicant argues that Diaz fails to teach or suggest, "wherein

certain software instruction can be processed by either the processor or a hardware accelerator

based on whether a hardware accelerator for processing the certain software instruction is

coupled to the bus, where the decision to process the certain software instruction in the processor

is made in real-time", as required by Claim 15. Diaz discloses that, "A further advantage of the

present invention is that when the decoder is connected to a processor some, or parts of some, of

the functional blocks of the decoder can be performed in the processor, allowing the decoder to

decompress more than one frame concurrently"; c. 5 ll. 21-25 and c. 10 ll. 29-33. Therefore,

performing part of the functions of the decoder by the processor can only occur based on whether

the processor is coupled to the decoder.

8.   Applicant also argues that Diaz fails to teach or suggest more than one hardware

accelerators for performing certain video processing functions associated with ones of the

software instructions. Claim 15 recites: "one or more hardware accelerators"; because of the

alternative recitation, Diaz at least satisfies the claim recitation of one hardware accelerator.

Conclusion

9.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing

date of this final action.

10.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to **Ulka Chauhan** whose telephone number is **(703) 305-9651**. The

examiner can normally be reached Mon.-Fri. from 9:00 am to 4:00 pm. If attempts to reach the

examiner by telephone are unsuccessful, the examiner's supervisor, **Matthew Bella**, can be

reached at **(703) 308-6829**.

> **Any response to this action should be mailed to:**
> Commissioner of Patents and Trademarks
> Washington, D.C. 20231
> **or faxed to:**
> **(703) 872-9314 (for Technology Center 2600 only)**
> Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,
> Arlington, VA, Sixth Floor (Receptionist).

11.   Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the Technology Center 2600 Customer Service Office whose telephone

number is (703) 305-4700.

Ulka J. Chauhan
Primary Examiner
Art Unit 2676

November 22, 2004